

175 the North was far more amenable to their continued rule than was the South. The Yuan and Ch'ing dynasties were both eliminated by revolutionary forces centered on or below the Yangtze River. As the northern provinces had been least resistant to the Manchu conquest, they were more trusted by the Ch'ing than were the southern provinces. Although the grain-tax wealth of the empire was largely derived from the South, Ch'ing revenues were most heavily lavished on Peking and the surrounding areas. For these and other reasons, including perhaps the fact that the northerners were more used to getting along with alien rulers, neither Shansi nor Hopei contributed significantly to the revolutionary movements that attempted from the end of the nineteenth century to overthrow Manchu rule and finally achieved success in 1912.

F. Transition in North China's Economic and Political Position

175
433 Shansi has never been rich agriculturally, but the Fan River portion of the province was able to satisfy a large part of the relatively limited grain demands of China's early civilization through the end of the Former Han Dynasty (206 B.C. to A.D. 9). In the latter Han Dynasty (23 to 220), the key economic area of the empire shifted from the loess

433 highlands to the North China Plain, which
175 included southern Hopei. ¹² At the end of the
third century and the beginning of the fourth century,
Shansi became sparsely populated and Hopei's
population was greatly reduced by the mass
emigration of Han Chinese fleeing from nomad
invasion, drought, and famine above the Yellow
River. ¹³

433 The building of the Grand Canal by the
175 Sui and the resulting realization of the agri-
312 cultural potential of the lower Yangtze basin under
the T'ang Dynasty, reduced the North China
Plain to a secondary economic position. How-
ever, although the Yangtze area contributed an
overwhelming share of the empire's tax-grain
revenues under the T'ang, the ruling house
attempted to improve the productive possibilities
of the home province of Shansi by undertaking
numerous irrigation projects there as well as
in Shensi to the west. ¹⁴

631 After the location of the capital at
175 Peking near the second economic area of China
433 and the rebuilding of the Grand Canal by the
Mongol rulers to bring to the political center

12. Chi, op. cit., pp. 83-92.

13. Harold Wiens, China's March Toward
the Tropics, Hamden, Conn., Shoe String Press,
1954, pp. 175-79.

14. Chi, op. cit., p. 42.

631 the resources of the primary economic area,
175 China did not again experience a protracted
●433 period of disunity until the Taiping Rebellion
in the mid-nineteenth century. Though free
from the risks and losses of ocean transport
and less vulnerable to pirate raids along the
coast, the inland waterway was increasingly
costly to operate and maintain. This fact and
the military danger of over-reliance of the
capital on the South for grain induced the Yüan,
Ming, and Ch'ing dynasties to attempt develop-
ment of the Hui River area near Peking by the
construction of additional irrigation systems.
The productive results of the projects never
came up to expectations, however, because
the climate and soil of the area were unfavor-
able.¹⁵

441 During the same period in Shansi,
175 individual initiative developed numerous similar
[312] hydraulic works in the province. Such private
[471] activity was uncommon in China and seems to
[565] have been an outgrowth of the relatively high
[438] degree of commercial development in Shansi.¹⁶
The rise of a merchant class in the province
began with the Shansi people's participation
in trade with the Mongol nomads at state-
regulated markets, established on the frontier

15. Ibid., p. 144.

16. Ibid., p. 144.

Table 3. Comparison of Production Yields Among Various Farm Groups*

Locality	Farm Groups	Yields of Grain	
		Catties per shih-mou	Pounds per acre
Taiyuan, Shansi	Agricultural Producers' Co-operatives (average 31 units)	267	1,762
	Mutual-aid Teams	-	-
	Individual Farms	247	1,643
Ch'ang-chih, Shansi	Agricultural Producers' Co-operatives (average 984 units)	306	2,019
	Mutual-aid Teams	253	1,670
	Individual Farms	240	1,584

* Chugoku keizai nempo [Economic Annual of China], Tokyo, Chugoku Keizai Kenkyujo [Chinese Economic Research Institute], 1954, p. 308.

474 The average yield per unit of land of the
433³¹ agricultural producers' co-operatives was
● about 7 per cent more than that of the
individual farms in Taiyuan district in 1953;
in Ch'ang-chih district, the average yield
per unit of land was 21 per cent more than that
of the mutual-aid teams and 27 per cent more
than that of the individual farms.

IV. AGRICULTURAL PRODUCTION

243 The dominant factor in the economy of
North China is the region's vast output of raw
cotton. The production of grains is only
secondary; other products such as peanuts,
hog bristles, and poultry are also produced in
large quantity.

A. Grains

The North China Region produces only
11 per cent of the country's grains. Wheat
constituted 24.5 per cent of the region's total
grain production¹⁷ in 1953. The production of
rice plays only a minor role in the total
output of North China since the diet of the
local population is unlike the most common in
East China and the Central-South Region,

17. Ching-chi Tao-pao [Economic Bulletin],
Hong Kong, March 10, 1953, p. 12.

474 In order to effectively promote the move-
433 ment toward collectivism, Communist propa-
ganda media was used to demonstrate the
superiority of co-operative farming over the
efforts of individuals. The following table
illustrates how the production yields of the
agricultural producers' co-operatives in Shansi
Province, according to the Communists, com-
pare with those of the mutual-aid teams and
individual farms in the same province.

243 "Other grains," including millet, corn, and kaoliang, led the list by 6.6 million tons, constituting 60 per cent of the total grain production, whereas the output of wheat constituted only 25 per cent of the entire grain stock in 1954. An upward trend in production has been noticeable since 1951. If 1949 production is assumed to equal 100, total output rose to 130 in 1951, 163 in 1952, 166 in 1953, 169 in 1954 and 178 in 1955.) The steady increase in grain production in North China may, in part, be accounted for by the early liberation of this region and the success of the Communists in completing the "land reform" program early in 1950.

B. The Adequacy of Grain Supply

433 One of the essential problems in North
243 China is the determination of the adequacy of grain supply relative to local demand. In order to properly approach the problem, the following steps are necessary: (1) data on the gross production of various grains in 1954 were used as the basis for calculation; (2) seed, fodder, and waste of unhusked grains were taken into account, allowed, and deducted; (3) the percentage allowed for the milling of various grains varies according to the local demand and was taken into consideration;

Table 6. North China Grain Supply in Terms of "Rice-Equivalents" (1954)

Unit - Million

S = shih piculs
T = tons

Grains	Gross Production	Supply After Provision for Seeds, Fodder, and Waste		Supply After Milling		Total Net Supply After Converting Into "Rice-Equivalents"	
		Standard of Conversion	Quantity	Standard of Conversion	Quantity	Standard of Conversion ^x	Quantity
Rice	3.4 S (0.2 T)	92.01	31.3 S (1.6 T)	92 [#]	28.8 S (1.4 T)	1.00	28.8 S (1.4 T)
Wheat	91.3 S (4.6 T)	86.47	78.9 S (3.9 T)	80	63.1 S (3.2 T)	1.02	64.4 S (3.2 T)
Soybeans	17.1 S (0.8 T)	81.94	14.0 S (0.7 T)	100	14.0 S (0.7 T)	0.99	13.8 S (0.7 T)
Tubers	44.8 S (2.2 T)	64.00	28.7 S (1.4 T)	100	28.7 S (1.4 T)	0.28	8.0 S (0.4 T)
Others ^y	216.3 S (10.8 T)	76.80	166.1 S (8.3 T)	89	147.8 S (7.4 T)	1.00	147.8 S (7.4 T)
Total	372.9 S (18.6 T)		319.0 S (15.9 T)		282.4 S (14.1 T)		282.5 S (13.1 T)

* FAO Balance Sheet for 1931-37, compiled from FAO World Food Survey, Food Balance Sheet for China, 1931-33.

[#] The official milling standard for rice, as announced by Chinese Communists, is 92, and this figure has been used for the present calculations.

^x Derived from the quantity of calories of various grains and tubers using the standard set by FAO, United Nations; 3,430 calories equal to one kilogram (2.2 lbs or 2 Chinese catties) of rice as the basis of calculation.

^y Including corn, kaoliang, barley, millet, oats, broad beans, and peas.

[Encina p 760]

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1: Stanford U.S.H.S. 1956 Africa North China AF 122

433(4) after reducing all the unhusked grains to
243 milled products available for human consumption,
it was necessary to convert all the various
grains other than rice into "rice-equivalents,"
based on specific standards; (5) in calculating
the total demand for grain, it was advisable
to convert the real population of North China,
regardless of age or sex, into the equivalent
number of "adult males." These steps were
followed in order to construct Table 6, which
follows:

Table 7. North China's Population
(In Terms of Equivalents of Adult-Males)*

Location	Population	Population in Equivalents of Adult-males
Hopei	35,984,644	29,507,408
Shansi	14,314,485	11,737,878
Peking	2,768,149	2,269,882
Tientsin	2,683,831	2,208,941
Total	55,761,109	45,724,109

* In making this conversion, the co-efficient 0.82 is used. It represents the mean between 0.76 derived by C. M. Chiao in his work China's Food and Population Problem, Shanghai, 1937, and 0.88 worked out by T. H. Shen in his book Agricultural Resources of China, New York, 1951.

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433 Using as a basis for calculation the statistics quoted in Tables 6 and 7, we can say that the total supply of "rice-equivalent" grains available for consumption in North China in 1954 was 262.8 million shih-piculs (13.1 million metric tons). If we use as a basis for calculation the Wu formula of 217 metric tons of milled "rice-equivalent" grains for each 1,000 "adult males" per year,¹⁸ the total amount of "rice-equivalent" grains required to supply the 45.7 million "adult males" in North China in 1954 was 9.8 million tons (10.8 million short tons) whereas the total supply of "rice-equivalent" grains in the same year was 13.1 million metric tons (14.4 million short tons), giving a surplus of 3.6 million tons of "rice-equivalent" grains in North China in 1954.

C. Cotton Production

248 During the first five years of the Communist regime, cotton production in North China showed a considerable growth, although there was some fluctuation. Statistical data on cotton production in this region is compiled in the following table:

18. Yuan-li Wu, An Economic Survey of Communist China, New York, Bookman Associates, 1956, p. 165.

243 The sudden jump in the amount of
248 acreage planted in cotton in North China was
● 433 probably caused by the adjustment of a
435 favorable parity price between cotton and
grain and the improvement of unit area yield.
The effect of the changes in the parity prices
was reflected very sensitively by changes in
cotton acreage. The prices which were
quoted in grains in various crop regions are
shown in the following table:

Table 10. The Ratio of Cotton Prices to Grains*
(in weight-units of grain to one unit of
cotton lint, 7/8" grade)

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1: Stanford U. S-4. 5 1956 AF12 North China
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Region	1950	1951	1952	1953	1954	1955
Wheat Region	7.0	8.0	7.5-8.5	6.25-7.5	6.75-8.00	6.75-8.00
Millet Region	8.0	8.5	8.0-9.5	6.75-8.0	7.50-8.25	7.50-8.25
Rice Region	6.5	8.5	8.0-9.0	6.75-8.0	7.25-8.25	7.25-8.25

* Newspaper Reading Handbook, Hankow, 1950, p. 574. Ching-chi Chou-pao
[Economic Weekly], Shanghai, May 28, 1953, p. 21; New China News
Agency, March 3, 1954.

256 information, it appears that relatively little effort has been made in the last few years to establish new facilities. In fact, a considerable portion of the available plants remained idle for some time during the first few years of the Communist regime as a result of marketing difficulties. Some of the mills have been turning out flour from coarse grains instead of wheat flour. However, as the urban population increases, the demand for flour from modern mills will undoubtedly grow.

V. CONCLUSION

471 The above review serves to point out that
 • 433 North China is being intensively developed in-
 178 dustrially on the basis of the region's resources of coal, iron, salt, and cotton and on the industrial base established by pre-Communist government and private enterprises. This development, owing much to the Communists' political motivation, has apparently been ruthlessly pursued. However, as far as the heavy industries are concerned, neither regional self-sufficiency nor a high level of output in the absolute sense are in sight. This is true especially in the case of the metallurgical and machinery industries.

Whatever industrial developments the Communists have been able to carry out have taken place under strict government control and within the general framework of national planning. There is, of course, no separate planning system for

47/ the North China region as such. As for the gradual process of socialization, its application in
●433 North China is discussed in the following
178 chapter.

509 Chungking line, the Peking-Mukden-Harbin-Chita line, and the Peking-Lanchou-Tihua Line.³³ International air routes, which are in process of organization, include the China-Burma, the China-India, and the China-Vietminh lines. When they will be opened has not yet been announced. Communist China claims that its civil-aviation goals for the first half of 1955 have been overfulfilled. The number of passengers carried was 13 per cent above the goal set, and the amount of freight carried was 5.9 per cent above that of the same period in 1954. In the same period, the amount of mail carried increased by 76 per cent.³⁴

IX. TRANSPORTATION OF KEY COMMODITIES

A. Grains

•433 Before World War II, North China was a grain-deficient region, forced to depend upon
489 a supply of millet, corn, and kaoliang from Manchuria and upon the import of wheat flour

32. China Weekly, Hong Kong, Jan. 10, 1955, p. 23.

33. Ibid.

34. New China News Agency release, Peking, July 30, 1955.

433 from abroad. Since 1952, the North China Region
489 has been self-sufficient and sometimes can
report a grain surplus. Rice from Kiangsu
and Chekiang and wheat from Shantung are
shipped to North China for local consumption
or to be processed by the large flour mills in
and near Tientsin and Peking. Wheat is
transported by rail from Shantung and Honan;
rice dealers rely on coastal shipping.

B. Cotton

North China is a cotton-surplus region which
produces, as a rule, about 40 per cent of the
country's total output of cotton. Cotton grown
in Hopei and Shansi is usually shipped by rail
to Shantung and Kiangsu in East China; a
certain amount of Shantung cotton is shipped
by rail to textile mills in nearby Hopei. Part
of the cotton processed in Hopei is sent
through the port of Tientsin to Shanghai,
Tsingtao, Chefoo, and other ports in Shantung
Province.

C. Coal

North China usually produces a surplus of
coal each year. After an amount is set aside
for local consumption, the remainder is
shipped to other regions. Coal mined in Hopei

433 and Shansi is shipped by rail to East China by
489 way of the Peking-Hankow, the Hankow-Canton,
the Tientsin-Pukou, the Tsinan-Tsingtao,
and the Shihchiachuang-Taiyuan railways. Coal
from the mines at Kailan meant for East China
coastal cities is usually loaded at Chinwangtao
Harbor.³⁵

XII. DOMESTIC TRADE

438 "State socialism" is the guiding principle
for the economy of Communist China. The
present stage of transition allows for state-
owned, co-operative, state-capitalist, and
individual trade and industry.

A. State-owned Trading Companies

438 In 1950, six domestic trading companies were
655 established with branches and sub-branches in
nearly all of the major cities of North China.
These are: the China Food Company, the China
Textile Company, the China Salt Company, the
China General Merchandise Company, the China
Coal and Building Materials Company, and
the China Native Products Company.³⁶ The

35. Economic Weekly, Shanghai, May 25,
1950, p. 9.

36. Newspaper Reading Handbook, Hankow,
Yangtze Daily, 1950, pp. 422-23.

262 the crop mu and 37.8 per cent of the crop area. Wheat was second with
241 22 per cent of the crop area and kaoliang third with 8.2 per cent. Rice was grown on only 2,090 mu and only in the 6th District, where the springs in the Black Dragon Pool supplied the necessary water. The other grains were corn, barley, and buckwheat.

The legumes were black beans, white beans, green beans, and peas. Black beans were grown as the only crop on 187,090 mu and on 66,800 mu with either kaoliang or glutinous millet. White beans were grown with millet on 146,740 mu. Green beans and sesame were grown together on 1,550 mu.

Sweet potatoes were the principal vegetable. They were reported grown on 95,080 mu, or 6.7 per cent of the crop area. No other vegetable had as much as one per cent of the crop area. The estimated sweet potato crop was 190,217,000 catties, an average of 2,000 catties per mu, 2,700 catties per family, 470 catties per person. This agrees very closely with the 2,500 catties per family and 415 catties per person consumed by the families in our budget study (see Chapter V).

The oil seeds were peanuts and sesame. They were grown on 4.7 per cent of the crop area. Poplar and willow trees were the only other crops that had as much as one per cent of the crop area. They had approximately 2.0 and 1.7 per cent.

433 The estimated yield of each crop, when grown as a first or second crop on irrigated or unirrigated land, is shown in Table 69. Barley and millet, grown as the first crop on irrigated land, gave the largest return, 16 and 14 tou per mu. Unirrigated barley produced only eight tou per mu, while millet, grown as the first crop on unirrigated land, averaged only six tou. Wheat gave only half the return of barley, eight tou on irrigated and four tou on unirrigated land.

The sweet potato crop was estimated at 2,800 catties per mu, when grown as the first crop on irrigated land. The return was only 1,800 catties for a second crop on unirrigated land. Cabbage and carrots averaged 3,000 catties, two tons per mu, on irrigated land. The figures for cotton were 80 and 50 catties per mu. Generally, the figures in Table 69 are lower than the average yields shown by the prices and crop value figures in Table 70. The difference is due partly to the fact that Table 69 is for the 1st District while Table 70 is for the entire hsien, partly to the fact that the tables are for different years, partly to the estimates being made by different investigators.

TABLE 69. AVERAGE CROP YIELD PER MU¹

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	Irrigated		Unirrigated	
	First	Second	First	Second
	(ton)		(ton)	
Barley	16	-	8	-
Buckwheat	-	12	10	8
Corn	9	8	-	-
Kaoliang	-	-	7	-
Millet	14	10	9	6
Millet, glutinous	10	8	9	6
Millet, paniced	10	8	9	6
Wheat	8	-	4	-
Beans, black	8	6	5	3
Sesame	-	-	4	3
	(catties)		(catties)	
Peanuts	350	300	-	-
Cabbage		3,000		
Carrots		3,000		
Garlic		600		
Onions	1,500	1,500		
Squash	2,500	2,500		
Sweet potatoes	2,800		2,000	1,800
Turnips		2,800		
Cotton	80	-	50	-
			(catties)	
Dates				250
Pears				1,200
Willow shoots				1,500
			(plants)	
Broom plants				300

¹ Estimate of field investigators for 1st District.

FARM OPERATION: COSTS AND RETURNS

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The production from the individual plots showed a wide range varying from 3.5 to 16 tou per mu for wheat and from 6 to 30 tou for corn. The averages for wheat, corn, barley, and millet were, however, similar. They all were between the 12 tou for wheat and the 13.6 tou for millet. Buckwheat averaged only 7.5 tou. Cotton production varied from 70 to 140 catties per mu, except for one farm that produced only 16 catties. Something very unusual must have happened to that plot. The cotton average was 95 catties per mu or approximately 750 pounds per acre.

The straw, stalks, and dried vines all had enough value to be counted as part of the farm production. The amounts reported varied from a minimum of 37 catties for one buckwheat farm to a maximum of 500 catties for a millet farm. For buckwheat the average was 105 catties, or wheat it was 145 catties. For barley and millet it was some 250 catties per mu. Beans grown on two millet plots and cabbage grown on two buckwheat plots were included in the by-products.

The prices quoted for the farm products varied to a considerable degree, possibly reflecting differences in quality and also possibly a market to market difference in price. The averages per tou were barley 63 cents, buckwheat 93 cents, corn 65 cents, millet 66 cents, and wheat \$1.04. For cotton the average was 14.3 cents per catty. These prices were all considerably higher than the 1931 figures found in our hsien wide crop study. (See Chapter X, Table 70.) A weighted index number for the five grains showed a 20 per cent drop in 1931.

In Peking the 1931 weighted index number for the food items included in the working class family budgets was 17.3 per cent below the 1930 figure. In Tientsin the drop was 8.5 per cent.²

The average prices per 100 catties for the by-products were barley 46 cents, buckwheat 39 cents, corn 39 cents, wheat 42 cents, millet 65 cents, and cotton 95 cents. Beans were quoted at \$1.00 and \$1.20 per tou, cabbage at three, four, and five cents per catty.

The grains produced an average gross income of \$9.50 per mu. Of this, \$8.20 was for grain and \$1.30 for straw and other products including a few beans and a little cabbage. The gross income from cotton was \$14.85 per mu, considerably more than for any of the grains, but this was offset by the higher rent and cultivation costs.

Corn gave the largest average net return. Barley was the only crop

2. National Tariff Commission, *The Shanghai Market Prices Report*, Shanghai, October-December, 1933.

THE CHIU TA SALT REFINERY.

13

ing the salt industry of this country.

In addition to the improvements of salt refining, the staff of the Research Institute has also worked out valuable results regarding the industrial uses of salt. Two industrial concerns, the Pacific Alkali Works and the Po Hai Chemical Works, may be said to be the offshoots of the Research Institute in that both are making use of the results of its research and are developing them along commercial lines.

It should be pointed out that the supply of crude salt produced in Tangku and its neighbouring districts has always been in excess of its demand. Take Hanku for an example. Its productive capacity per year has been 4,000,000 piculs, while only one-half of it is actually sold. The sheer waste attendant upon salt production in this country is certainly astonishing. It has also been estimated that 800,000 piculs of mother liquor, an important by-product of salt have been thrown away every year without any recognition of its value. If the Research Institute could continue to work on the industrial utilization of salt, as it has already done in making possible the establishment of the two companies—the Pacific Alkali Works and the Po-Hai Chemical Works—it would not only help solve the problem of turning to good account the enormous amount of salt which would otherwise be wasted, but also confer an enormous benefit on the multitudes of salt producers throughout China by giving them livelihood.

The town of Tangku has experienced during the last thirty years several vicissitudes. The year 1898 marked the beginning of a phenomenal growth, for in that year the riverway leading from it to Tientsin was blocked by silting to such an extent that steamers of over one thousand tonnage had to lay anchor at Tangku where loading and unloading of goods were effected. The town at once found itself flourishing and prosperous, for what had been originally a mere outer port now became the only important gateway of North China. In 1900, however, came the Boxer Uprising. Being the main entrance to Tientsin and Peking,¹

¹ Now changed to Peiping by order of the Nationalist Government.